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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,944	07/31/2003	Corey Howard Metcalfe	029260.006	1750

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EXAMINER

KIM, ANDREW

ART UNIT PAPER NUMBER

3714

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/631,944	METCALFE ET AL.	
	Examiner	Art Unit	
	Andrew Kim	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7, 8, 14-17 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 14-17 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/28/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This office action is in response to the amendment filed on 7/7/06 in which:

- Claims 1, 17 and 21 has been amended.
- Response to claims rejection have been filed.
- Claims 1-3, 7, 8, 14-17, and 20-22 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 7, 8, 14-17, and 20-22 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Where the primary gas supply is directed to in the recoil valve is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Without disclosing where precisely the primary gas supply is directed, the claimed invention may or may not be enabled. That is, if the primary gas supply is directed to the same cavity in which the spring is contained (both are in the proximal end according to the claims) then the low

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pressure gas needed to move the recoil valve and actuate the cylinder and bolt assembly is insufficient. Thus, disabling the invention.

Claims 1-3, 7, 8, 14-17, and 20-22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for having four gates whilst the primary gas supply is directed into proximal valve gap (64c), does not reasonably provide enablement for having three gates whilst the primary gas supply being broadly directed to the proximal end of the recoil valve. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention without undue experimentation. The invention as disclosed in the specification is not enabling because a low-pressure gas applies less pressure on the recoil valve than the combination of a spring and a high-pressure gas and therefore unable to function as intended (to simulate weapon fire).

For the purposes of examination, the Examiner assumes there are three gates and the pressure port is directed to the central recoil valve cavity such that there can be one recoil motion.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code 103 not included in this action can be found in a prior Office action.

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Claims 1-3, 7, 8, 14-17, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schumann (US 6,146,141) in view of Edelman (US 4,770,153).

Schumann discloses a simulated pistol wherein a compressed air cylinder (bolt and piston assembly) causes the pistol carriage to recoil as recited in claims 1, 14, 17, and 21 (see Abstract). The compressed air is stored in the magazine which can be detached from the housing as recited in claims 1, 14, 17, 21 and 22 (col. 2, line 50).

Edelman discloses a pneumatic weapon that utilizes a pneumatically operated bolt assembly which is coupled to an electronic control system as cited in claims 1, 14, 17, and 21 (col.1, lines 9-12). Edelman further discloses that the pneumatic gun can be designed to simulate the operation of an automatic firearm (Abstract).

Regarding claims 1 and 17, Schumann discloses an isolated weapon simulator having a bolt providing recoil for a user comprising:

- A housing including a piston chamber and a piston (fig. 1, item 30) in the chamber wherein the piston connect to the bolt (fig. 1, item 33);
- A regulated gas supply (fig. 1, item 17) detachably attached to the housing;
- A valve chamber (fig. 1, item 25) in said housing, said valve chamber connected with said regulated gas supply and the bolt;

Schumann discloses the claimed invention with the exception of

- A recoil valve positioned in said valve chamber, said recoil valve positioned to control the release of gas from said regulated gas supply to said piston chamber;

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- A first gate (Edelman, fig. 13, item 142), second gate (Edelman, fig. 13, item 180), third gate (Edelman, fig. 13, item 182);
- A distal valve cavity (Edelman, fig. 13, item 144) defined between said first gate and second gate;
- Wherein said central valve cavity (Edelman, fig. 13, item 146) is defined between said second gate and said third gate.
- A pilot valve connected to said regulated gas supply; and
- A pilot channel connecting said pilot valve to said valve chamber, wherein said pilot valve transmits gas to said distal end of said recoil valve from said gas supply to shift said recoil valve in said valve chamber.

Instead, Schumann discloses a changeover valve (fig. 1, item 24) located in the valve block (fig. 1, item 25) which connects the compressed air chamber (fig. 1, item 29) to the compressed-air magazine. In an analogous pneumatic bolt assembly weapon apparatus reference, Edelman discloses a recoil valve (firing valve, fig. 12, item 130 and fig. 4, item 16) which controls the release of gas from regulated gas supply to the piston chamber (bolt assembly, fig. 12, item 50). Edelman further discloses a pilot valve (fig. 12, item 134a) connected to regulated gas supply as well as a pilot channel (fig. 13, item 147 or fig. 4, item 24) to said pilot valve to said valve chamber, wherein said pilot valve transmits gas to said distal end (fig. 13) of said recoil valve from said gas supply to shift said recoil valve in said valve chamber.

One of ordinary skill would have seen the benefit of using Edelman's pneumatic/electrical weapon assembly because Edelman's invention provides a high

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pressure firing valve (recoil valve) for controlling the delivery of high pressure air to the pneumatic bolt so as to provide a high rate of fire at the same time that the muzzle velocity of projectiles discharged (bolt/piston action) by the weapon is increased (col. 2, lines 60-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Schumann with the recoil and pilot valve as taught by Edelman to provide a high rate of fire and velocity of the bolt.

Regarding claim 2, Schumann as modified by Edelman discloses a recoil cylinder port (valve stem, Edelman, fig. 13, item 158) connecting said piston chamber with said valve chamber; wherein said recoil valve controls the release of gas through said recoil cylinder port into said piston chamber to move said piston.

Regarding claim 3, Schumann as modified by Edelman discloses

- A spring (Edelman, fig. 4, item 23) positioned in said valve chamber (Edelman, fig. 4, item 16);
- Wherein said recoil valve includes a proximal end and a distal end; and
- Wherein said spring applies a force to said proximal end of said recoil valve in said valve chamber.

Regarding claim 7, Schumann as modified by Edelman discloses

- A gas supply channel (Edelman, fig. 13, item 186) through said housing connecting said gas supply with said valve chamber;
- Wherein said pilot valve (Edelman, fig. 13, item 134a) conveys gas to said distal end of said recoil valve to displace said recoil valve (Edelman, fig. 13, item 162) in said valve chamber;

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- Wherein said central valve cavity (Edelman, fig. 13, item 146) is in communication with said supply channel and said recoil cylinder port (Edelman, fig. 13, item 174) to allow gas to engage said piston in said piston chamber.

Regarding claim 8, Schumann as modified by Edelman discloses an exhaust port (Edelman, fig. 13, item 172) traversing said housing from said valve chamber.

Regarding claims 14, 21 and 22, are rejected for the reasons set forth hereinabove for claim 1 and therefore the Office maintains the same line of reasoning.

Schumann as modified by Edelman discloses

- Providing a piston (Schumann, fig. 1, item 30) slidably mounted in a piston chamber (Schumann, fig. 1, item 28) in the firearm housing;
- Attaching a regulated gas supply (Schumann, fig. 1, item 17 and the related description thereof) to the firearm housing, said gas supply distributing compressed gas;
- Providing a recoil valve (Edelman, fig. 13) in a valve chamber having a distal end and a proximal end, said distal end of said valve chamber connected to a pilot valve (Edelman, fig. 13, item 134a) and said proximal end of said valve chamber connected to said gas supply (Edelman, fig. 13);
- A first gate (Edelman, fig. 13, item 142), second gate (Edelman, fig. 13, item 180), third gate (Edelman, fig. 13, item 182);
- Conveying gas using said pilot valve to said distal end of said valve chamber (Edelman, fig. 13);

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- Displacing said recoil valve (Edelman, fig. 13, item 162) in said valve chamber; and
- Forcing gas from said gas supply through said recoil valve into said piston chamber to generate recoil (col. 2, lines 20-33).

Regarding claim 15, Schumann as modified by Edelman discloses biasing said proximal end of said recoil valve in said valve chamber with a spring (Edelman, fig. 13).

Regarding claim 16, Schumann as modified by Edelman discloses forcing gas from said gas supply into a central valve cavity of said recoil valve; and dispersing said gas from said central cavity into a recoil cylinder port connected with said distal end of said valve chamber to overcome the biasing force of said spring (col. 11, lines 5-32).

Regarding claim 17, using the same line of reasoning as claim 1, Schumann as modified by Edelman discloses the claimed invention with the exception of an electrically-controlled valve connected between said recoil valve and said gas supply, wherein said electrically-controlled valve conveys gas to said recoil valve to displace said recoil valve in said valve chamber. Instead, Schumann discloses a pneumatic/electric converter is provided at the changeover valve instead of the contact, which, when the valve tappet is actuated, delivers an electric signal to the electronics control system to generate a laser impulse through the laser 1 (Schumann, col. 4, lines 41-48) and an electronics system (fig. 1, item 13). In an analogous pneumatic bolt assembly weapon apparatus reference, Edelman discloses on col. 8, lines 29-44 that the pneumatic mechanism may be fired under the control of a solid state adjustable pulse circuit to fire in modes such as semi-automatic, burst fire, and automatic fire.

One of ordinary skill would see the benefit of modifying Schumann with a pneumatic mechanism that may be fired under the control of a solid state adjustable pulse circuit to vary the rate of fire using the electronic circuitry that controls the weapon (col. 8, lines 29-44). Changing the rate of fire is important in a weapon because different situations call for different rates of fire. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Schumann reference with an electrically controlled valve as taught by the Edelman reference to provide the user different rates of fire.

Regarding claim 20, Schumann as modified by Edelman discloses the electrically controlled valve is a pilot valve (Edelman, figs. 1, and 11-12, item 32)

Response to Arguments

Applicant's arguments with respect to claims 1-3, 7, 8, 14-17, and 20-22 have been considered but are moot in view of the new ground(s) of rejection.

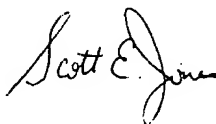
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Kim whose telephone number is 571-272-1691. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hotaling can be reached on 571-272-4437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SCOTT JONES
PRIMARY EXAMINER

A.K. 12/11/2006